Kreutzer, R., L. Harmon and S. Hoshiko (1995). Citizen illness reports following aerial malathion application, Corona and Norco, Riverside County, California, February-May 1994, California Department of Health Services, Environmental Health Investigations Branch.

EXECUTIVE SUMMARY

Introduction and background

This report describes the health complaints to a phone bank during the Mediterranean fruit flu (medfly) eradication program in the Corona/Norco communities of Riverside County, CA, from February-May 1004. Although malathion has been used previously in residential areas and has met all regulatory requirements for use, the California Department of Health Services (DHS) believes that anytime a widespread chemical exposure cannot be prevented, then some form of health surveillance must be instituted to watch for unusual and unexpected outcomes in the general population and great than expected outcomes in sensitive subpopulations.

Results

During the period of interest, the phone bank received 32,828 calls concerning all aspects of the spray program, of which 244 were health-related. These represented 208 individuals because some persons called more than once. Callers also frequently contacted other providers or agencies. Women (70.5%) called more frequently than men, and those in age groups over 35 years called more frequently than their proportion of the Corona/Norco population generally. Hispanics and Asians called less and African-Americans more frequently than their proportion in the population. A higher proportion of phone bank callers than the population at large had at least a college education. Thirty-two percent of complainants reported at least one pre-existing condition, particularly respiratory conditions including asthma.

The most frequently mentioned exposure route was “pesticide mist or fumes were breathed in,” followed by “pesticide came in direct contact with skin or eyes,” although respondents reported in 25.4% of calls that they did not know how the exposure occurred.

The most frequently mentioned primary symptom of all calls was shortness of breath/coughing (22.5%), followed by headache (19/7%), rash (13.9%), eye irritation (12/3%), and nausea (7.4%). The primary symptom was reported as severe in 49/6% of calls, followed by moderate and then mild. Asthmatic individuals tended to describe their symptoms as severe more frequently than non-asthmatic callers.

In comparing the data from Corona/Norco with the findings from the 1990 malathion application in the Los Angeles Basin, the frequencies of reported symptoms appear to be similar, although Corona/Norco residents may have reported more skin-related symptoms and fewer problems with diarrhea. These discrepancies may be due to differences in the symptom groupings between the two reporting systems.

Substantial variation was found in symptom frequencies between pre- and post-spray in a study

of the Santa Clara malathion program in 1980, regardless of exposure status. However, the study was limited by small sample size. Data from the California Behavioral Risk Factor Surveillance System (1991) suggests that the prevalence of reported symptoms like headache and nausea varies greatly by age, sex, and smoking status, but in general these symptoms occur fairly frequently. It is difficult to draw inferences regarding health effects based on reported symptoms, largely due to limitations in available comparison data.

Conclusions and Recommendations

The phone bank was not created in order to validate or invalidate an individual's symptom or illness report. Rather, it was a tool for detecting unusual or unexpected events, learning about citizen concerns, and dispensing information about the medfly program. DHS staff offer several recommendations to address unresolved issues: 1) a panel of health experts be convened to determine the need for additional clinical evaluations of selected health complaints, and review the indications for an feasibility of performing epidemiologic studies on the effects of malathion exposures on exposed populations, particularly respiratory, dermatological, and psychosocial; 2) local health officers, selected providers, civic leaders and activists be convened to evaluate the program's performance in Corona and Camarillo; 3) a review of procedures and strategies be conducted for conveying information to the public about medfly eradication decisions and malathion health risks.